As, Hg AND Ni LEVELS IN SERUM AND SEMINAL PLASMA AND MALE INFERTILITY

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Background/Aims: An increasing number of studies suggest that chemical and physical agents in the environment, introduced and spread by human activity, may affect male fertility in humans.
We investigated the relationships between exposure to heavy metals (Arsenic, Lead, Nickel) in the serum and in seminal plasma and the presence of possible alterations of sperm parameters of male exposed to air pollution of an area of high environmental crisis.

Methods: A case–control study was conducted. The cases (87) were recruited from Melilli, the controls (13) were recruited by Regalbuto, a rural area. The heavy metals concentrations were detected by a Perkin Elmer Elan DRC-e ICP-MS. The progressive motility (a+b) of spermatozoa was evaluated.

Results: Lead, arsenic and nickel showed higher concentrations in cases than controls in both serum and seminal plasma. The samples showed a motility reduction from 45% to 23 % (50% reduction). In both volunteers, sperm density and morphology were into the reference limit of WHO parameters, whereas a slight decrease was detected in progressive motility in male volunteers living in the study area.

Conclusion: Our results suggest that the presence of Lead, Nickel and Arsenic in the reproductive tract of men may be related to a moderate alteration of motility of spermatozoa. This study suggest that heavy metals may have adverse impacts on male reproductive health.

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